Ciscomotors

C-Max

SIMPLIFIED MAINTENANCE MANUAL

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CISCOMOTORS 2008 .

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1. OPERATING INSTRUCTIONS

1.1 BASIC OPERATION

FUEL

- **C-Max** has a two-stroke engine that requires a gasoline-oil mixture.
- Use gasoline with a pump octane number of 92 or higher .If "knocking" or "pinging" occurs, try a different brand of gasoline or a higher octane grade.
- To mix gasoline and oil in a ratio of 33:1. Prepare the fuel mixture in a clean container fig. 1 , and shake until thoroughly mixed before filling the fuel tank.

- **USE A GOOD QUALITY OF SYNTHETIC 2-STROKE OIL**

CAUTION:

To much oil will cause excessive smoking and spark plug fouling. Too little oil will cause engine damage or premature wear. Mix fuel in a ratio of 40 parts gasoline to 1 part oil (33:1)

- Vegetable oils separate from gasoline more easily than mineral oils, especially in cold weather. It is advisable to use synthetic oil.

CAUTION:

- Do not mix vegetable and mineral based oils.

WARNING

- **Gasoline is extremely flammable and is explosive under certain conditions. Perform this operation in a well-ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the area where gasoline is drained or stores and where the fuel tank is refuelled.**

FUEL 92/98 octane	Synthetic oil
litres	cl
1	0,3
2	0,6
3	0.9
4	12
5	15
10	30

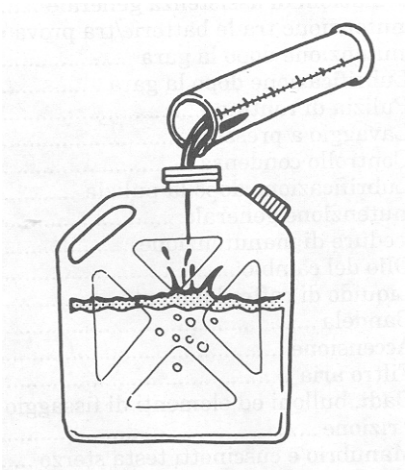

Figure 1

1.2 START ENGINE

WARNING

- **Never run the engine in an closed area. The exhaust contains poisonous carbon monoxide gas that can cause loss of consciousness and may lead to death.**
- **Attention to start the engine without the reducer provokes the outbreak of the clutch and can cause injury or damages.**
- **Never run the engine without propeller.**
- **The starter attempt can carry to the spin of the propeller and therefore to possible lesions.**
- **The motor running emits disturbs electromagnetic**

<u>Version manual starter with clutch</u>:

1. **Starter engine to warm:**

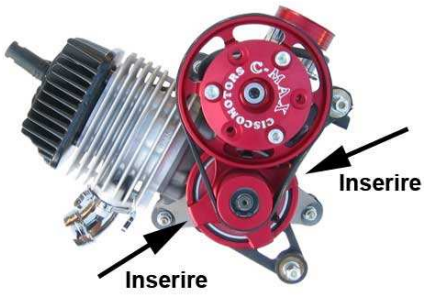

Figure 1

1. To carry in a pressure (by manual pump) circuit of the gasoline, if necessary help by press the diagram. Fig. 2

Figure 2

2. Don't engulf the engine but make sure the gasoline goes in intake pipe.
3. Insert the Block Clutch System (Fig.1)
4. Grasp the start and pull gently just after point more hard (try repeatedly to be sure)
5. Pull whit energy the handgrip without speed for 3 o 4 and without groped to start.
6. Pull with energy the handgrip and speed slightly after first turn of engine.
7. In case of start failed to repeat again the operation.
8. After starter engine heat it 2/3 minutes speeding from 3000 to 4000 turns max.

<u>Starter the engine to warm</u>:

1 Insert the Block Clutch System (Fig.1)
2 Pull with energy the handgrip and speeding slightly.

<u>Stopping The Engine</u>

- Press the stop button of the engine until the engine stop completely.

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Version manual starter without clutch:

1. To carry in a pressure the circuit of the gasoline, to help itself pressing the diagramm (Fig.2)
2. Don't engulf the engine but make sure the gasoline goes in intake pipe.
3. To pull the starter and delicately pull just after the hard point (try repeatedly for be sure).
4. Pull with energy the handgrip and speed slightly.
5. In case of start failed to repeat again the operation .
6. After starter engine heat it 2/3 minutes speeding from 3000 to 4000 turns max.

Start the engine to warm:

1. Pull the handgrip with energy without speed.

Stop the engine

- To press the stop button of engine until the engine stop completely .

Version electric starter:

1. To carry in pressure the circuit of the gasoline, to help itself pressing the push-button (Fig.2)
2. Don't engulf the engine but make sure the gasoline goes in intake pipe.
3. Act on the start button without speed for 5 or 6 turns engine.
4. In case of start failed to repeat again the operation.

Start the engine to warm :

1. Pull the handgrip with energy without speed.

Stop the engine

- To press the stop button of engine until the engine stop completely .

1.3 RUNNING-IN PROCEDURE

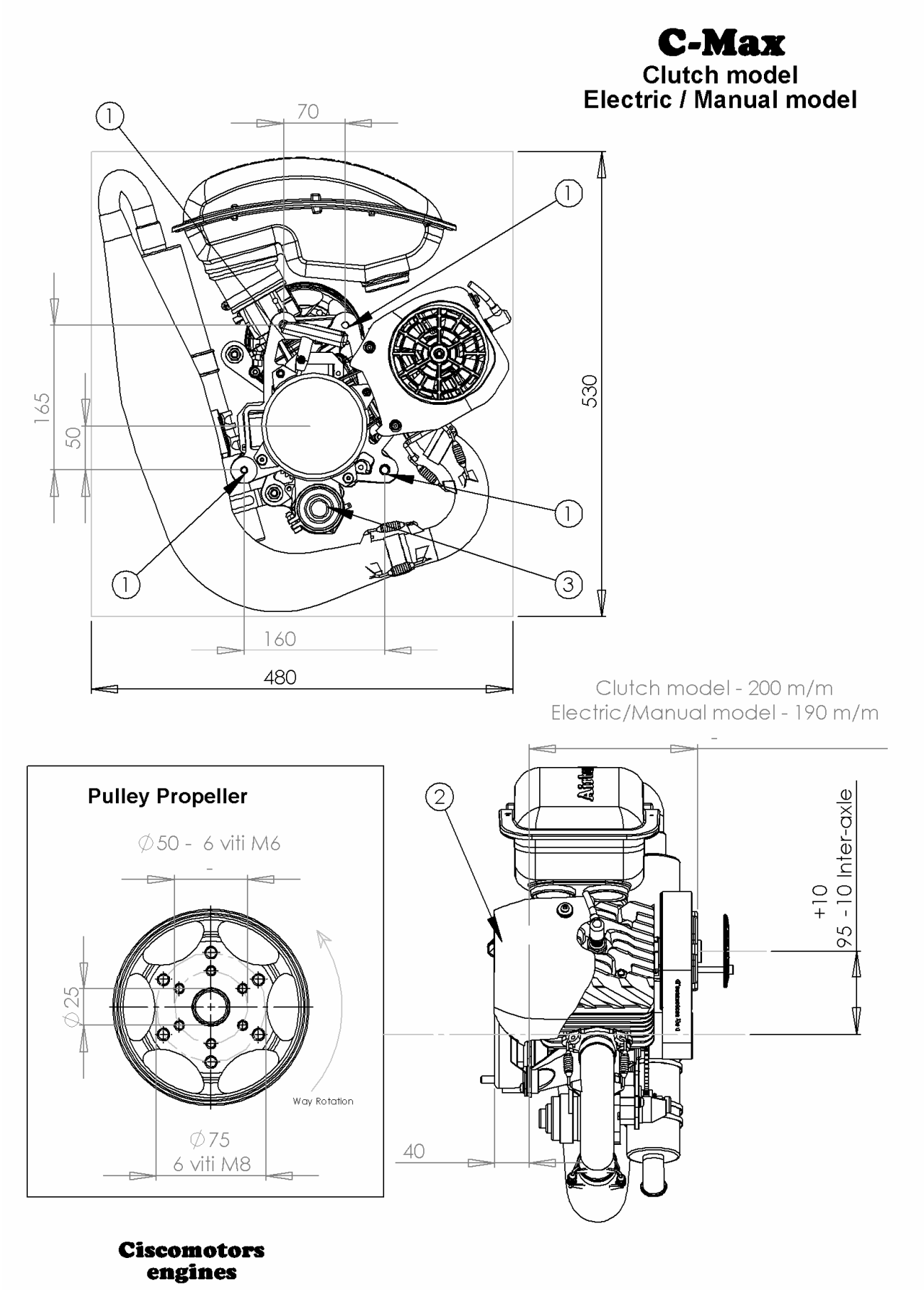
Following proper break-in procedure helps censure that some of the most important and expensive components on your new **C-Max** will provide maximum performance and service life. (Also follow proper run-in procedure for a newly rebuilt engine)

1. Do not hold the throttle in one position for more than a few seconds. It's better to roll the throttle on and off, without getting too high altitudes and forcing the engine.
2. Use the motor for features of 10 minutes at a time and to leave to cool it.
3. After 5 hours of use or approximately 20 litres of gasoline the motor should be broken in.
4. This same procedure should be followed each time

- Piston is replaced
- Cylinder is replaced
- Crankshaft or crank bearings are replaced

2. SPECIFICATIONS

2.1 ENGINE INSTALLATION ON CHASSIS



Picture 3

1. Support engine
2. Manual starter
3. Electric starter

2.2 TECNICALS CHARACTERISTICS

Motor C-MAX	
Type	2 strokes cooled to air
Disposition cylinder	Mono cylinder
Bore max	65mm
Stroke max	53mm
Displacement	175cc
Compression ratio	11 : 1
Maxim Power	20 kw (27cv) 7800 turns
Max Torque	25 Nm 7400 turns
Max turn of engine	8100 turns
Electrical system	
Ignition	Inductive coil
Rotor	Neodynium Magnet
Spark plug standard	Ngk B8BS
Spark plug summer +30° c	Ngk B9BS
Starter	Manual / Electric
Carburettor	
Type	Walbro
Transmission	
Clutch Type	Centrifugal 3 shoe
Reduction	Pulley/Pinion
Reduction ratio	1/2,6 – 1/2,8 – 1/3
Exhaust	
Type	Expansion chamber
Silencer	Glass wool
Support engine	
Type	N.4 Silent-block

The standard carburation
Temperature 10°c
P 1024 Mb
UR 50%
Altitude (S.L.M.) 50 m

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3. MAINTENANCE

3.1 GENERAL SERVICE INFORMATION:

- Wear gloves and glances when you make the maintenance;
- Do not perform maintenance while engine is running. Injury to your fingers, hands or head may result ;
- Perform maintenance on firm, level ground, using hard work plain , and not directly on chassis;
- Always install **new** gaskets, o-rings, piston pin clips, rings etc .when reassemble some parts.
- When tightening bolts, nuts or screw, start with the larger diameter or inner fasteners, and tighten them to the specified torque using a criss-cross pattern;
- Use genuine **Ciscomotors** parts when maintenance your **C-Max**
- Clean parts in not-flammable cleaning solvent when disassembling. Lubricate any sliding surface, o-rings and seals before reassembling.

WARNING

Gasoline or low flash point solvents are highly flammable or explosive and must never be used for cleaning parts . Fire or explosion could result.

- After reassembling, check all parts for proper installation and operation

NOTE:

- Specification are listed chapter **2**.

3.2 ROUTINE CLEANING

- If the **C-Max** is only little dirty to clean up it with clean dusts cloth without solvents
- If the **C-Max** is much dirty to clean up it with biodegradable detergents and not with solvents, lubricate where is necessary.

Engine Number

Figure B

3.3 MAINTENANCE SCHEDULE

FREQUENCY	INSPECT	REPLACE
Before and after each use	All screw nuts, bolts correctly tighten, silent-block in, and check carburation. Belt transmission	
Every 50 hours	Clean air filter	Transmission belt
Every 100 hours	Cylinder head decarbonizing Diameter of clutch and clutch bell	Bearing crankshaft Glass wool Silencer Spark plug
Every 200 hours		Oil seal crankshaft Piston complete Cooling belt
Every 500 hours	Thermical group . Connecting rod	Crankshaft bearing
Each year	All rubber and plastic components.	Fuel diaphragm carburettor , spark plug.

4. STORAGE

Extended storage such as for winter, requires that you take certain steps to reduce the effects of deterioration from not use of your **C-Max**. In addition necessary repairs should be made before storing your **C-Max**: otherwise these repairs and clean may be forgotten by the time your **C-Max** is removed from storage.

6. ASSEMBLY/DISASSEMBLY STARTER

1. Remove 4 screws (Fig.18)

2. Remove the screw (Fig.20) for to arrive to the pulley

3. Remove the pulley (Fig.21)

4. Control the screws (Fig.19) are in a good conditions and locked.

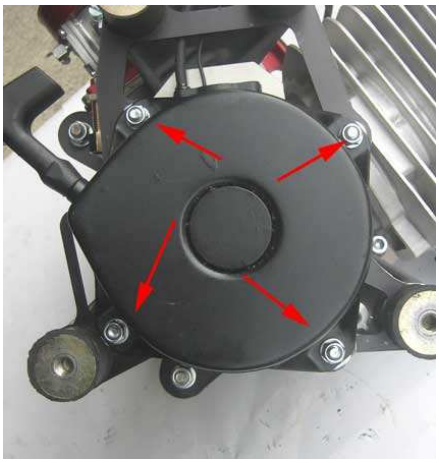


Figure 18

1. Install the pulley and tighten the screw (pict. 20) to the specified torque **TORQUE : 15Nm(1,5 kgf/m)**

2. Insert the starter in 4 screws (Fig.19)

3. Tighten the screws (Fig.18) to the specific torque using light locking agent **TORQUE:** 12**Nm (1.2 kgf/m)**

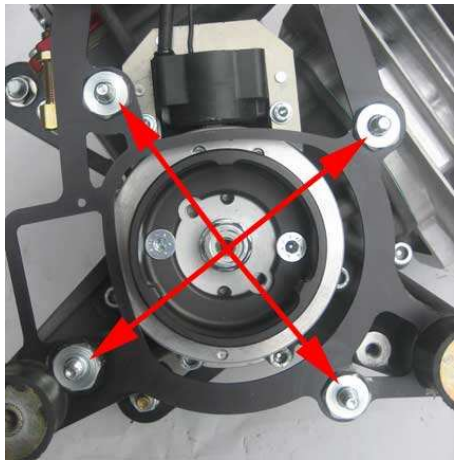


Figure 19

Figure 20

Figure 21

7. REGULATION BELT TRANSMISSION

The tension of belt must be done very carefully

1. Slightly little the 4 fix screws of bracelet (Fig.32)
2. Insert an Allen key 8 m / m in the seat (Fig32-1 point 2) and rotate counter-clockwise torque of 400 Nm (40kgf / m)
3. Tighten the 4 Allen using the cross method the specified torque

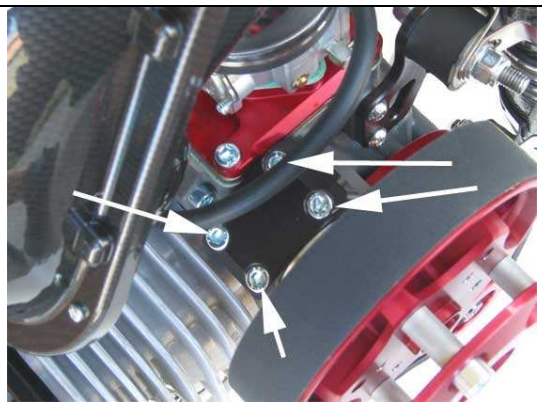


Figure.32

- **TORQUE: 12Nm (1,2 kgf/m)**

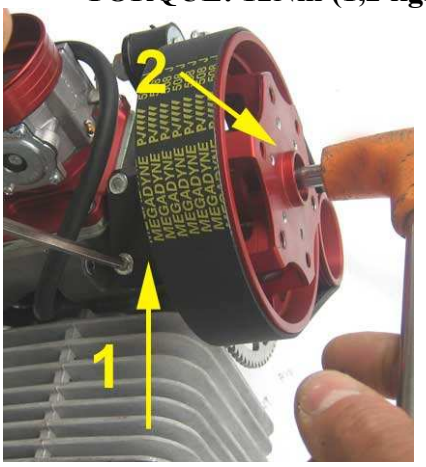


Figure 32-1

CAUTION:

Control the tension as Fig.32-2

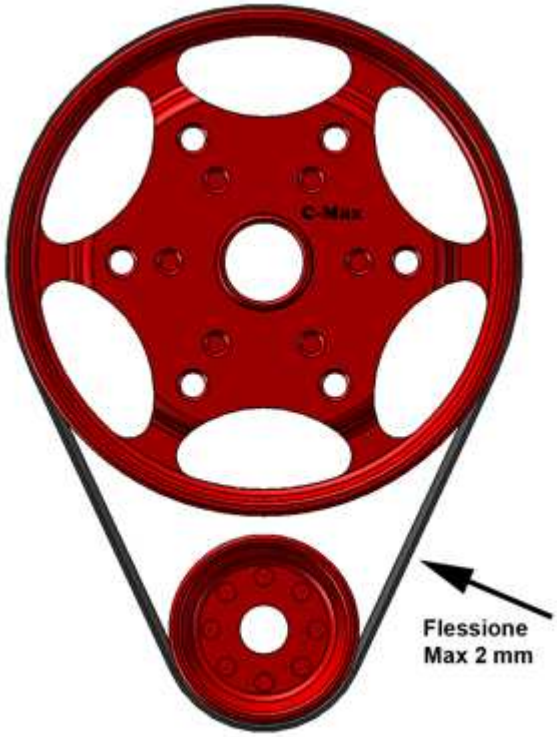


Figure.32-2

1. Tension too taut it's cause of early usury of bearing
2. Tension too loose it's cause of exessive consumpion of belt.

8. CARBURATION REGULATION

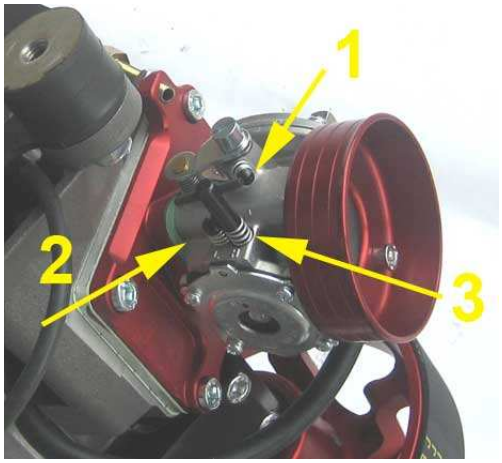


Figure 35

1. Regulation min.throttle engine
2. Regulation gasoline/air min. (L)
3. Regulation gasoline/air max (/H)

Standard regulation

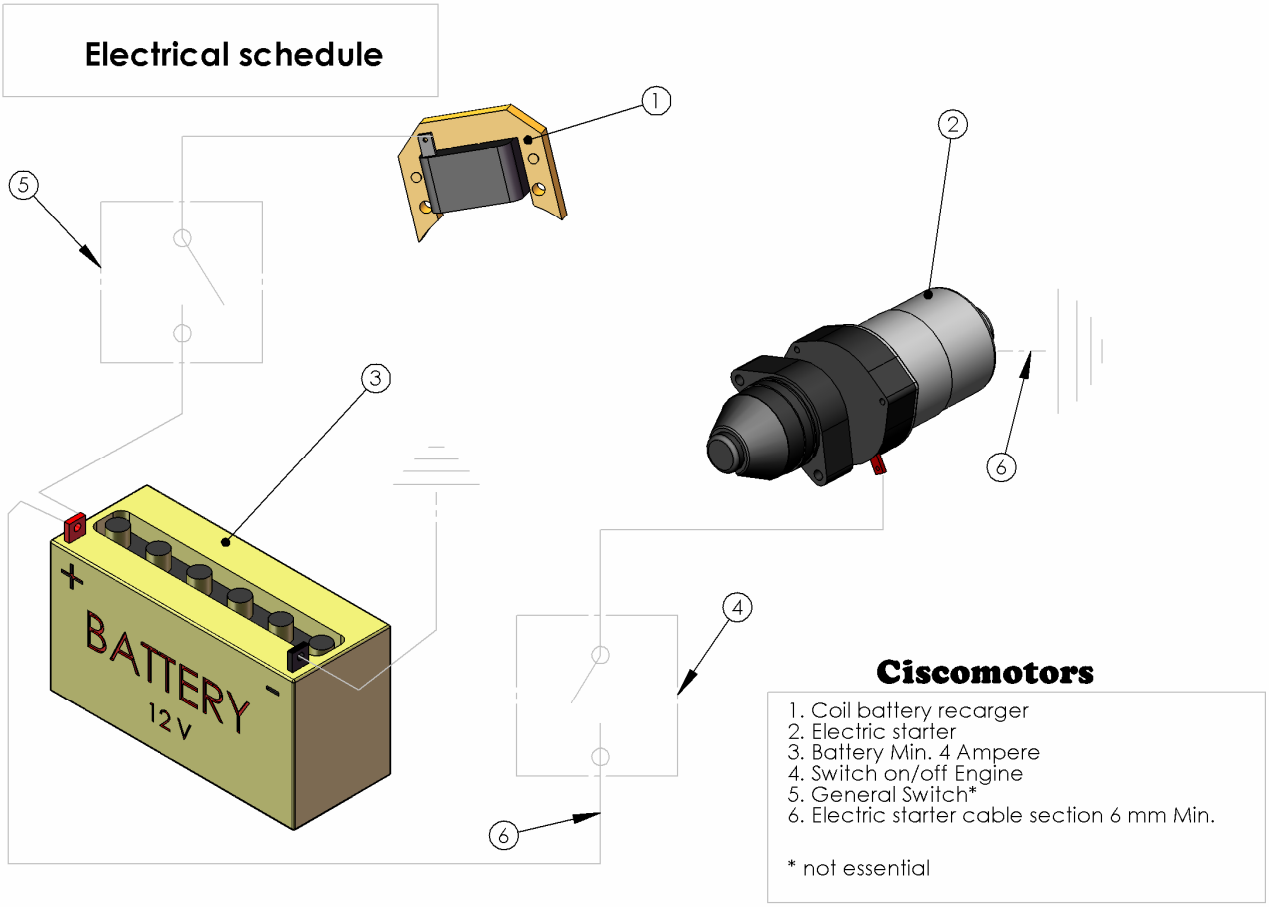
In case problems of wrong carburation , replace the originals levels.
Screw regulation of min. 1 turn from all closing. . (Fig.35 point 2)

Attention: regulation of carburation must be made at warm motor.

1. Start the engine.
2. To warm the motor for 4 or 5 minute to the regimen of spin of 3500/4000rpm;
3. Regulate the screw of max jet H, ((Fig.35 point 3) from 1 turn to 1-1/4 from all closing.
4. Regulate the screw of the minimal jet L, (Fig. 35 point 2)from 3/4 to 1 turn, to put the motor to 5000 rpm, to screw or to unscrew the screw until when the motor turns cleaned up and does not mutter;
5. To leave the motor for some second ones at minimum, to accelerating normally , now the motor must quickly accelerate without mumbling or to come less.
6. To regulate the lessened motor spin of the 2000/2200 rpm. (Fig. 35 point 1) C-Max clutch
7. To regulate the lessened motor spin of the 2500/2600 rpm. (Fig. 35 point 1) C-Max electric or manual starter.

8. ELECTRICAL SCHEDULE

Electric starter with recharge battery



10. TROUBLESHOOTING

10.1 THE ENGINE DON'T START

CHECK	POSSIBLE CAUSES	SOLUTION
Check if fuel is jetting to the carburettor	No fuel in tank	Fill tank for fueling
	Clogged fuel line or fuel filter	Replace and clean
	Diaphragm fuel pump broken	Replace the diaphragm (Fig. 5)
Check electric	The engine stop switch is to ON	Move it on OFF
	Faulty spark plug	Replace
	Broken or shorted ignition coil	Replace

10.2 ENGINE LAKS POWER

CHECK	POSSIBLE CAUSES	SOLUTION
Check the carburation	Fuel air mixture to lean	Unscrew the min screw (Fig. 35- 2)
	Fuel air mixture to reach	To screw the max screw (Fig. 35- 2)
	Clogged fuel line or fuel filter	Replace or clean
	Diaphragm fuel pump broken	Replace the diaphragm (Fig. 27)

10.3 EXESSIVE VIBRATIONS OF THE ENGINE

CHECK	POSSIBLE CAUSES	SOLUTION
Silent-block engine	Excessive wear, holder rubber	Replace (Max 70 Sh)
	Prop out of balance	Balance or replace

11. TORQUE VALUES ENGINE

ITEM	Thread diam. x pitch	Torque Kgf-m
Cap screw propeller hub M6	M 6 x 1,0	1.2
Cap screw propeller hub M8	M 8 x 1,25	1.5
Spark plug	M14 x 1,25	1,8
Cap screw cooling air duct	M 5 x 0.8	0,6
Cap screw crankcase starter	M 6 x 1	1.2
Bolt cylinder head	M 8 x 1,25	1,5
Screw transmission eccentric	M 6 x 1,0	1,2
Bolt silent-block exhaust	M 8 x 1,25	1.5
*Bolt clutch	M 18 x 1.25	4.0
All bolts	M 6 x 1	1
*Bolts starter	M 10 x 1,25	3,0
Bolts pinion transmission	M 12 x 1.25	4,0

* Apply locking agent